Pain-Induced Psychological Stress: A Barrier To Wound Healing

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INTRODUCTION

Pain is a common experience for people with chronic wounds.[1-3] The pain can be a result of underlying pathologies and/or trauma associated with wound care interventions, e.g. dressing changes.[4-5] The intensity of wound-related pain can have a deleterious effect on physical functioning, cause psychological stress and reduce the quality of everyday living for patients.[6-9] Minimising trauma and pain should be a key objective in the care of patients with chronic wounds but this is not always so.[8] There is evidence that psychological distress delays wound healing[10] and it is reasonable to hypothesise that reducing psychological stress by minimising pain will improve chronic wound healing.

AIMS

This poster outlines the results of a review of the evidence in support of the hypothesis that the healing of chronic wounds can be improved by reducing pain-induced psychological stress. It also highlights the importance of taking measures to minimise wound-related pain.

METHODS

Bibliographic databases (MEDLINE, National Library of Medicine, Bethesda, USA; EMBASE, Elsevier BV, Amsterdam, Netherlands) and wound care-related journals were searched for relevant published data.

RESULTS AND DISCUSSION

The key findings of the literature review are:

Wound-related pain is known to be a stressor.[11-13]

Evidence from a number of clinical studies indicates that psychological stress has an adverse effect on wound healing and tissue repair,[14-17] and that dysregulation of immune function and the resultant depression of pro-inflammatory cytokines are involved.[18-19]

Clinical evidence of an association between pain and delayed wound healing exists.[20]

Wound-related pain is undoubtedly a major contributor to psychological stress, and minimising pain on an individual patient basis should be a key priority in wound management.

Dressing changes are the most frequent cause of pain in wound management, and particular attention should be given to the use of dressing regimes that minimise the risk of trauma to the wound and peri-wound skin.[21-22]

CONCLUSIONS

There is a substantial body of evidence to support the hypothesis that chronic wound healing can be improved by minimising pain-induced psychological stress. Clinicians should take a holistic approach to the management of chronic wound pain, including the selection of dressing regimes that are atraumatic and are clinically proven to minimise pain at dressing change.

Pain-Induced Psychological Stress Delays Wound Healing: A Hypothesis

CHRONIC WOUND (e.g. VENOUS LEG ULCER)

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ACUTE/CHRONIC PAIN

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NOCIOCEPTIVE PAIN | NEUROPATHIC PAIN

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PERSISTENT PAIN

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PSYCHOLOGICAL STRESS

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STRESS HAS AN EFFECT ON PHYSIOLOGICAL AND BIOCHEMICAL RESPONSES

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DELAYED WOUND HEALING RESPONSE

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DELAYED WOUND HEALING CAN OCCUR AS A DIRECT RESULT OF PSYCHOLOGICAL STRESS

Pain is an accepted feature of chronic wounds

Nocioceptive pain – normal response to painful stimuli, generally localised to the wound

Neuropathic pain – due to nerve damage or dysfunction in central nervous system

Persistent pain is very distressing and causes psychological problems

Biochemical processes affected:

- Increase in cortisol
- Immune function dysregulation
- Levels of inflammatory cytokines and enzymes affected

Evidence to support stress delays healing in acute wounds:

- Punch biopsies
- Blisters
- Surgical wounds
- Skin stripping
- Inguinal repair
- Gastric bypass surgery

Holistic Management of Chronic Wound Pain

Pain is a frequent symptom of patients with chronic wounds, and contributes to suffering and reduced quality of life

Pain is the symptom that patients with chronic wounds find most distressing. Dressing changes are the most frequently cited cause

Chronic pain is unrelenting, it is likely that stress, environmental and affective factors may be superimposed on the pain arising from the original damaged tissue and contribute to its persistence and intensity

Pain assessment is the first step in aiding in the management and treatment of the patient

Key elements of pain assessment:

1. When and for how long (acute or persistent).
2. Type of pain (nociceptive or neuropathic)
3. Severity (using an established rating scale)
4. Impact of pain on the patient
5. Factors which increase or decrease pain
6. Relief rating: eg assessment of post analgesia
7. Identification of treatmentrelated adverse side effects

PAIN IS AN ACCEPTED FEATURE OF CHRONIC WOUNDS

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Treating the underlying pathology is effective but may be difficult, if not impossible. Therefore means of alleviating wound pain are required. Eliminating infection is also a priority.

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A regimen for relieving pain and stress should be developed for individual patients. eg. analgesics and/or psychological and other non-drug therapies

Drug therapies	Psychological	Non-drug therapies
Analgesics	Cognitive behavioural therapy	Reduce anxiety during dressing procedures
Opioids – quick acting but problematic	Relaxation techniques	Choose appropriate dressings that:
Local anaesthetics – doubtful efficacy	Hypnosis TENS	1. promote moist wound healing
NSAIDS – little supportive data	Acupuncture, energy healing, distraction (eg music), prayer etc	2. do not dry out 3. stay in situ longer 4. do not leak 5.prevent trauma to wound and surrounding skin

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Dressings with Safetac® soft silicone adhesive technology fulfil these criteria, they have low peel strengths to reduce damage, are designated atraumatic and are the first choice for preventing wound trauma

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